Air Navigation Pro 4

Quick Start Guide

Air Navigation

Real time navigation system with moving map for iPhone & iPad.

Available on the App Store

For more information: www.xample.ch

Xample

The information in this document is subject to change without notice and does not represent a commitment on the part of Xample ltd. The software described by this document is subject to a License Agreement and may not be copied to other media. All product and company names are TM or ® trademarks of their respective owners.

Document authored by: Johann Huguenin and Flavien Volken
Product Version: 4.0 (07/2011)
Document version: 1.0 (07/2011)

Special thanks to our Beta testers, partners and users who where invaluable in making this a better product.

Switzerland
Xample llc
Coteau des lfs 41b
1400 Cheseaux-Noréaz
Switzerland
www.xample.ch

Contents

1. Introduction

- About this document
- About Air Navigation
- Disclaimer

2. User interface

3. Setup

- Application settings
- Installing maps and charts
- Installing VFR approach charts for Germany
- Reinstalling previously purchased maps and charts

4. Moving map

- Realtime usage
- Route planning
- Map settings and display options

Introduction

Thank you for your interest in Air Navigation. Air Navigation was developed with General Aviation in mind, however it was quickly adopted by pilots of various flying vehicles including for example paragliders, gliders, ultralight, single or multiengine airplanes, helicopters and even hot air balloons.

Air Navigation is an affordable, yet powerful flight planning and realtime navigation application. With version 4, the application user interface was overhauled to make it easier to use and add various new features. We hope you'll enjoy the product as much as we enjoyed working on it.

About this document

This document is not intended to be a complete user manual. A complete user manual covering all the functionalities of Air Navigation will be available separately. In this document you will find references to 3 versions of Air Navigation (Free, Standard and Pro), however, this document will focus on Air Navigation Pro 4.0.

About Air Navigation

Air Navigation is a real time navigation and flight planning application. It is distributed in 3 versions :

- Air Navigation Free
- Internal database with more than 100 000 waypoints, airports and related information
- Navigation instruments (HSI, CDI, ADF)

- Air Navigation Standard
- Moving map with direct to waypoint capability
- Access to free of charge, open source maps, downloadable from within the application
- Internal database with more than 100 000 waypoints, airports and related information
- Internal database with airspaces information (not all countries available)
- Logbook (manual)
- Navigation instruments (HSI, CDI, ADF)

- Air Navigation Pro
- Moving map with multi leg flight planning or direct to waypoint capability
- Access to commercial aviation charts (as in-app purchases) for Europe, USA, Australia, New-Zealand (check our website for available countries)
- Support for geo referenced approach charts (not all countries available, check our website for information)

- Access to free of charge, open source maps, downloadable from within the application
- Internal database with more than 100 000 waypoints, airports and related information
- Internal database with airspaces information (not all countries available)
- Logbook (automatic)
- Support for elevation data, see terrain in front of airplane or while planning legs
- Navigation instruments (HSI, CDI, ADF)

Minimum requirement

Air Navigation Pro 4 will run on :

- An iPhone, iPod Touch or iPad
- iOS operating system version 4 or higher
- 200 MB of available space for the application and database
- approximately 350 MB of available space for each chart of the size of a country like France or Germany
- A GPS module is mandatory for real time navigation. iPhone 3G/3GS/4 and iPad 1 or 2 with 3G capabilities have an integrated GPS. iPod Touch and iPad Wifi only require an external GPS module. Example of external GPS modules are :
    - TOM TOM car kit for iPhone or iPod Touch
    - GNS 5870 MFi Bluetooth
    - Bad Elf 66 channels

The application will run on a 3G iPhone. For better performances an iPhone 3GS or 4 is recommended.

Disclaimer

Before using this software, you must read and agree with the following terms and conditions.

This software is not intended to replace a certified navigation device! We do not guarantee the accuracy and comprehensiveness of the information provided. The embedded navigation database is provided for informational purpose only. It may not be complete and may contain erroneous data.

You should always use official aeronautical documentation (AIP) when preparing and performing a flight. You should always use certified navigation devices when performing a flight. This software is provided 'as-is', without any express or implied warranty. In no event will the authors or third party data providers be held liable for any damages arising from the use of this software.

YOUR USE OF THIS REAL TIME ROUTE GUIDANCE APPLICATION IS AT YOUR SOLE RISK. LOCATION DATA MAY NOT BE ACCURATE.

User interface

On iPad the screen is divided to display the selected route and an instrument of your choice on the left side. The moving map is on the right side together with the data bar at the bottom.

An optional terrain profile view can be displayed at the bottom. The moving map can be set to fullscreen and it this case, the route and the instrument are hidden but still accessible from the instrument button in the top toolbar.

Other modules, functionalities and settings can be accessed from the top toolbar.

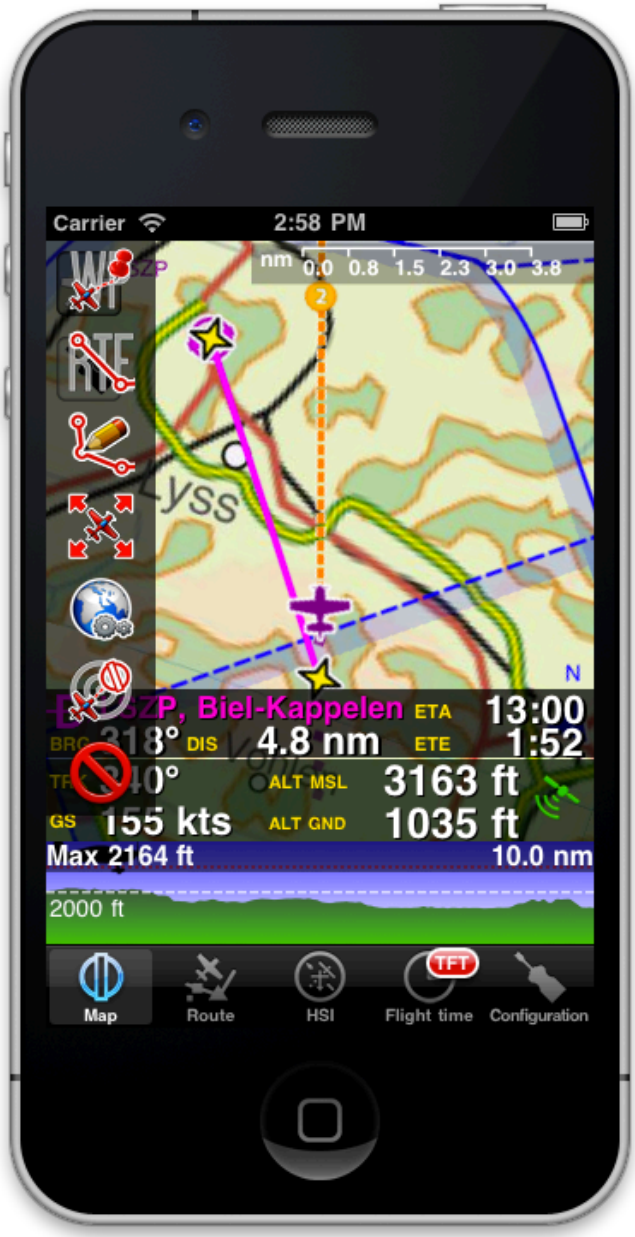
Air Navigation Pro 4 on iPad

Air Navigation Pro 4 on iPhone/iPod Touch

On iPhone one module can be displayed at a time. By default, the moving map is displayed at launch time. Other modules can be displayed by pressing the corresponding tab buttons at the bottom of the screen.

On iPhone the toolbar is hidden by default and you must press the «screwdriven» button on the left side to display it.

Other modules and settings can be accessed in the «Configuration» tab in the bottom right corner.



Toolbar (normally hidden) →

← Moving map

Terrain profile →

← Tab bar

Buttons in the Toolbar

On iPad, this button toggles between split screen and full screen mode
On iPhone, this button toggles the moving map data bar visibility on/off

Displays the map settings module. In the map settings you can configure what will be displayed on the map and how. For example, you can turn on and off maps/charts displayed as the background. Select airspaces classes and waypoints types to be displayed. You can also show or hide the terrain profile view.

Toggles between flight mode and edit mode. When edit mode is turned on, it is possible to tap waypoints on the map to add/remove them to/from the current route. It is also possible to insert a new waypoint by pressing on a leg vector and moving to a new location (rubber banding).

Displays the waypoint database where it is possible to search for a particular waypoint or list nearby waypoints, sorted by distance.

Displays the list of saved route. Tapping on a route from the list will set this route as current, display the legs in the «Route» module and display the route in the moving map as a magenta vector.

Selects the nearest airfield from your current location as a direct to waypoint.

DIsplays the current flight logbook entry. On iPhone, this module is reachable from the tabs at the bottom and has a slightly different icon.

Displays the instruments list. On iPhone/iPod Touch, the instruments list is reachable from the «Configuration» tab at the bottom right corner.

Displays a list of weather stations and latest METAR/TAF information in a decoded format. You can add stations of your choice by entering an identifier in the search field on top and press return. On iPhone/iPod Touch, this module is reachable from the «Configuration» tab at the bottom right corner.

Displays a list of documents (PDFs) associated to an airfield. Pressing a document will display its content in fullscreen mode. On iPhone/iPod Touch, this module is reachable from the «Configuration» tab at the bottom right corner.

Display the «Tools» list where you can find additional utilities such as the GPS Bridge to connect 2 devices or to the X-Plane simulator. On iPhone/iPod Touch, the tools are reachable from the «Configuration» tab at the bottom right corner.

Display the «Settings» module where you can fine tune the application behavior and customize units and other settings On iPhone/iPod Touch, the settings are reachable from the «Configuration» tab at the bottom right corner.

Setup

After installation of the application, at first launch, the system will ask for authorization to access location data (GPS). You should allow GPS access to Air Navigation otherwise realtime navigation functionalities will not work properly.

After launching Air Navigation for the first time, the map should be centered to your current location. The application has an internal waypoints database and you should see waypoints in the vicinity on the map.

Please note that no map background is installed with the application. You can install map background from various free of charge or commercial sources from the «MapStore» module located in the «settings» menu on iPad and in the «Configuration» tab on iPhone/iPod Touch. You can find more information on how to install maps/ charts in the next chapter.

Should you wish to change length, speed or altitude units, you can do so from the «Settings» panel.

Installing maps and charts

Free of charge open source maps, charts from the public domain and commercial charts can be installed to be used as the background image of the moving map module.

Maps/charts are downloaded from our servers from within the application. They are stored in the iPhone/iPad memory and do not require an internet connection while flying.

To browse the available maps/charts catalog, choose «MapStore» from the «Configuration» menu (top right button) on iPad or from the «Configuration» tab on iPhone.

Before you attempt to download a map you should check that :

- Your iPhone/iPod/iPad is connected to a functional Wifi network
- Bluetooth is turned off on your device, as it can disturb the Wifi network, sometimes leading to download failure.

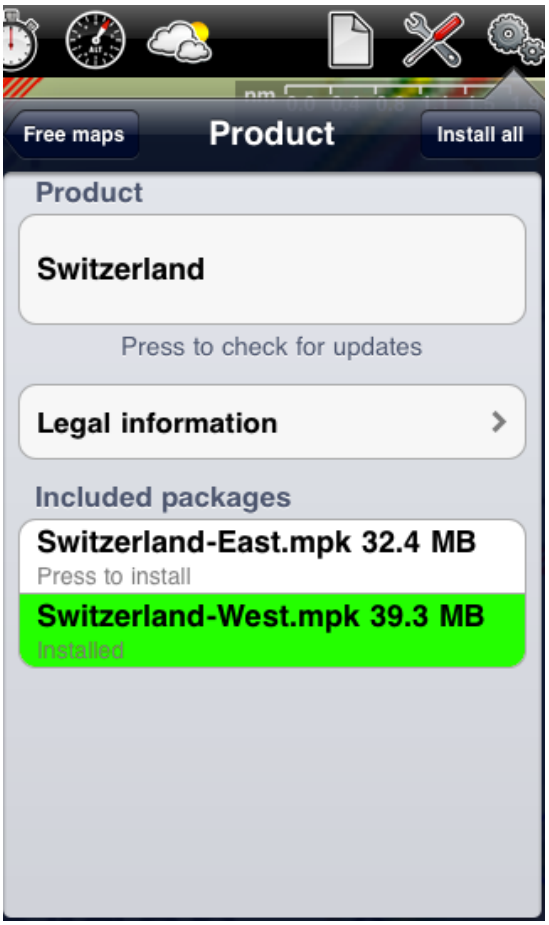
The map store module has 2 sections. The top section is to manage installed product. In the installed product module, it is possible to display a list of maps/charts installed on your device. It is also possible to reinstall a product in the it is not functioning properly. This is also where you can delete a product or parts of a product that is outdated for example.

The «Download Queue» module lists current and pending downloads. This module is typically used to monitor download progression of a map/chart It is possible to reorder the downloads or to remove an item from the download list.

The «Download products» section is a catalog of available maps/charts. You can browse the products and get information about them such as :

- Source/Provider
- Country or Area
- Product size
- Product price (if not-free)
- Included packages : Most products contains only 1 package, however, some products may be composed of 2 or more sub packages. It is possible to choose which packages will be installed or not. For example, the USA Sectional charts are sold as one product but contains more than 50 sectional charts. Should you wish to fly only the east coast of the United-States, you can install only the relevant charts.

It is possible to install the other package later by browsing to the product detail and press the corresponding line in the «included packages» section.



Installed packages appear colored :

- Green : installed and up to date
- Orange : installed but a newer version is available for download

Uninstalled packages appear in white.

When a particular package appears in orange, it means that an update is available. The reason could be :

- A chart update, that is part of your subscription is available
- We found an issue with the chart and we released a fixed version

In Air Navigation 4 with added support for a new map/chart file format of higher quality. The old map packages are displayed with the «Air Navigation 2.x - 3.x map group» tag in the «Installed products» module. The older packages are not part of iTunes backup. The newer packages are now part of the iTunes backup and should be restored with the application if you reinstall your device.

Installing VFR approach charts for Germany

Due to licensing terms, the VFR approach charts for Germany are not (yet) sold through the AppStore facility. You can purchase the approach charts package from our web store, hosted at Kagi at this url :

http://store.kagi.com/cgi-bin/store.cgi?storeID=HEC_LIVE&&

In the confirmation email, you will receive a license code and a clickable link. The clickable link will install the product automatically in Air Navigation. Should you wish to install it manually, you can input the license code in the «Restore purchases» -> «Input code» module of the «MapStore module» (see next chapter for details).

Reinstalling previously purchased maps and charts

In Air Navigation 4 we added a «Restore purchases» button on the top right corner of the «MapStore» module. This is useful if you reinstalled the application and to reinstall the maps from the internet. Pressing this button will ask you if you want to :

- Restore purchased charts from your iTunes account : In this case a list of purchases found on your iTunes account will be displayed. You can then press on a particular chart to reinstall it for free. This will also work if you install Air Navigation on a new iPhone or iPad, in this case you should use the same iTunes account as you other device.
- Input a license code : this option can be used for product that where sold with a license code, such as the VFR approach charts for Germany

The moving map

The moving map is the main instrument of Air Navigation. It is used for real time navigation as well as route planning or creation of user waypoints.

In Air Navigation 3, a separate module was used to create route and waypoints. In Air Navigation 4, everything can be done from the moving map. It is possible to add intermediate waypoints to your current route during a flight (to avoid bad weather conditions for example)

nm 0 1 2 3 4 5 6 7
LSZP
Lyss
N
LSZP, Biel-Kappelen ETA 13:00
BRG 322° DIS 5.8 nm ETE 2:18
TRK 340° ALT MSL 2639 ft
GS 153 kts ALT GND 504 ft
Max 2164 ft 10.0 nm
2000 ft

By default, the moving map is centered on your current location, north oriented. By pressing to the symbol in the top left corner, you can toggle between :

- North oriented, current location in the center of the screen, moving
- Track oriented, current location at 1/3 the bottom of the screen, rotating to match current track, moving

Touching and moving the map will switch to **panned mode.** In this case the map will be moved to the location of your choice, north oriented. It will **not move** to follow your current location, instead, the aircraft symbol will move on the map, possibly leave the screen area. You can center the map again and restore map movements by pressing once on the symbol in the top left corner.

Touching an area of interest on the map will reveal a popup with useful information.

Touchable items are :

- Waypoints : elevation, type, full name for Navaids, you will also the frequency, for Airports you will get runway and frequency information.
- Airspace : lower and upper limits, name, class and additional information

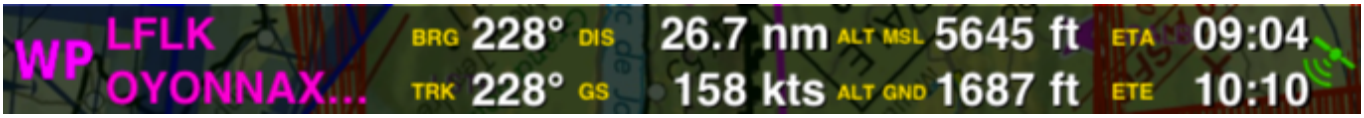
On iPad, pressing outside the popup will hide it, on iPad you have to press the close button in the top right corner of the popup.

When in flight mode (default), pressing on the name of the waypoint will ask you if you want to select this waypoint and affect it to an instrument or direct to point in the moving map.

The data bar at the bottom of the moving map will display real time information such as next waypoint information (identifier, name, bearing, distance and estimate time), current speed as reported by the GPS (ground speed), track, altitude as reported by the GPS, height over ground (if the elevation data for your area is installed), quality of the GPS signal.

For real time navigation, the quality of the GPS signal is required to be a green or yellow symbol. A red or orange symbol will only show an approximate location and will not report speed nor track information.

For better results, you should place your device near a window, with a direct view of the sky, Do not hold the iPad with the hand covering the GPS antenna (black area on the top of the iPad). If you are flying with a full metal airplane or your airplane is equipped with anti ice windshield, the internal iPhone/iPad GPS may be a bit weak and you may need an external GPS module.



Route planning

By default, the moving map is in «flight mode». You can toggle the moving map from «flight mode» to «planning mode» at any time to create or amend a route by pressing the «Edit» button in the Toolbar.

To start **creating a route** :

- toggle to «edit mode», a yellow and black striped bar should appear at the top of the moving map. A search field will also appear on top of the «Route» module.
- To **add waypoints**, press on waypoints of your choice on the moving map. In the waypoint popup, press the «add to route» option. A yellow star should now appear on the moving map and your waypoint should be in the «Route» list.
- Alternatively, you can input one or more waypoint identifiers in the search field on top of the «Route» module and press return. Multiple identifiers must be separated by a space.

In edit mode it is also possible to **reorder** and **remove** waypoints from the list in the «Route module». Alternatively, you can remove a waypoint by pressing on the map and choose the «remove from route» option.

It is possible to **insert a waypoint** by pressing on the magenta vector (leg) and moving to a new location on the map. As a result a new waypoint will be inserted in the «Route». If the location on the map is not over an existing waypoint, a «temporary» waypoint will be created. You can add this waypoint later to the database if you wish to do so.

You can **create a new waypoint** by pressing 2 seconds at its location on the map. A popup will ask if you want to add this point to the database or simply use it as a «temporary» waypoint for the route or direct to.

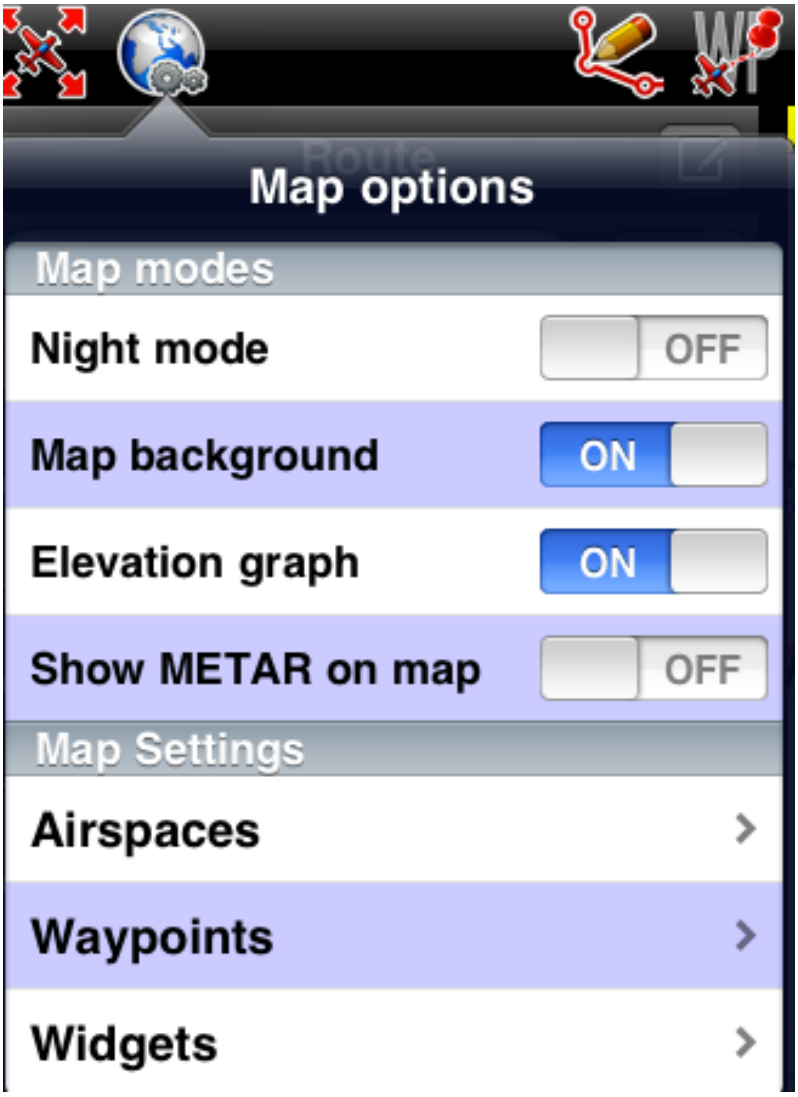
In the «Route» module, you can press on the «Summary» line at the top of the list to set the route name and wind, cruise speed information. The route name is used to identify a particular route in the «Routes list» when they are saved. Wind and cruise speed information will be used to display estimated time and heading in «edit mode». In «flight mode» current speed as reported by the GPS will be used to compute estimated time.

The button in the top right corner of the «Route» module can be used to **reverse the route**, **duplicate** the route or **clear** the current selected route

When you are satisfied with your route, you can toggle back to «flight mode», the route is automatically stored in the «Routes list».

Map Settings and display options

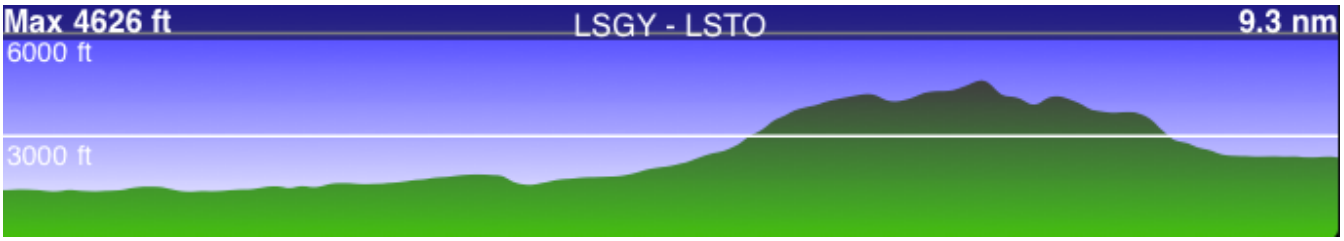
From the «Toolbar» press the «Map Settings» button to access various options for the moving map.



- Turn on/off the night mode
- Show/hide the map background (the installed charts/maps)
- Show/hide the terrain elevation graph
- Display symbols of weather conditions (VMC, IMC) on the map
- Setup the airspaces filter and display modes
- Setup the waypoints filter
- Enable, disable the extended track and bearing line widgets
- Enable Maps/Charts and choose which map will be displayed on top where they overlap

The terrain elevation view

if elevation data is installed for your region, the elevation graph will display terrain information.



In «Flight mode», it will display the terrain in front of the aircraft, updating the view every 5 seconds, the terrain view can be zoomed to display 10 NM to 50 NM of terrain elevation. The maximum reported altitude will be displayed in the top left corner of the elevation view. A symbol representing your aircraft will be displayed in the view with a red dashed line, representing your current altitude, as reported by the GPS.

In «Edit mode», it will display the terrain between the two waypoint of the selected leg. This is very useful when planning your route, to get an estimate of the minimum safe altitude.

Please note that even with a good GPS signal, the altitude as reported by the GPS may have an accuracy of +/- 200 ft. Elevation database may also contains some inaccuracies. You should always plan your flight with a reasonable margin over the obstacles.

The «Maps» settings module

Air Navigation 4 has a new map engine, capable of displaying multiple maps at the same time an specify which map should be displayed on top where they overlap.

Newer versions of the maps have been released and contains more level of details. As a result, the display quality will be improved, especially for maps with a scale of 1:250k to 1:50k and at lower zoom levels. Air Navigation 4 maps will nicely blend together at edges. It means that you can now mix maps from different providers and use them all at the same time.

For best results, you should not enable older maps with newer, otherwise the engine will default to the old display mode and you may not get the best quality.

In the screenshot above, the Switzerland, Germany and Italy North are enabled. Those 3 maps have areas that overlap. Because the Switzerland map is placed on top, it will be displayed first and then the Germany map, the Italian map will be displayed in the background of the 2 others.

Getting support

We are currently working on releasing a complete user manual for Air Navigation 4. The manual will be translated in other languages such as French and German.

In the mean time, if you don't find a specific information about the product, you can send us a support request from the «contact form» of our website : http://www.xample.ch